

REMARKS

Claims 1-8 are present in this application. Claims 1, 6, and 7 are independent.

Claim Rejection – 35 USC 102(e)

Claims 1-7 have been rejected under 35 U.S.C. 102(e) as being anticipated by Vaithyanathan et al. (U.S. Patent 5,857,179). Applicant respectfully traverses this rejection.

Claim 1 is directed to a keyword driving device comprising, among other things,

a document data acquiring section for acquiring document data each having a parameter previously added thereto and for registering the document data including words and the parameter to a document table;

a document data dividing section for dividing the acquired document data for each type of the parameter by distinguishing the types of parameters of the document data;

a word table registering section;

an importance table registering section; and

a keyword deriving section.

Claim 6 is directed to a key word deriving method comprising, among other things,

acquiring document data each having a parameter previously added thereto;
dividing the acquired document data for each type of the parameter added to the document data;
performing a partial statistical process;
calculating an importance; and
deriving a word.

The Office Action relies on Vaithyanathan at column 2, lines 28-36, for teaching the claimed acquiring document data and dividing the acquired document data for each type of parameter of the document data.

That section in Vaithyanathan states that,

"In one respect of the present invention, each document is represented by a respective M dimensional vector, where M represents the number of terms or words from a predetermined domain of documents. The vectors are stored in an initial matrix of documents and terms. The dimensionality of the initial matrix is reduced to form resultant vectors of the documents. The resultant vectors are then clustered such that different respective documents are grouped into different clusters."

This section is a summary of features presented in Vaithyanathan's invention, shown in Figure 3. The "M dimensional vector" is further described in column 5, lines 14-18. The "initial matrix of documents and terms" is the MxN initial matrix 50 shown in Figure 3 and described in column 6, lines 34-38. An example of an

initial document by term matrix is shown in Figure 6B. Reduction of the dimensionality of the initial matrix to form resultant vectors is further described in column 6, lines 39-67, where the initial NxM matrix is decomposed into a left matrix 52, center matrix 54, and a right matrix 56. An example of a right matrix is shown in Figure 6C. Clustering of the resultant vectors is described in column 7, line 11, to column 8, line 11, and involves reducing the right matrix into a matrix of loading vectors 58, projecting the initial matrix into a matrix of reduced dimensionality 60, and clustering the matrix of reduced dimensionality 60 to obtain clusters of documents. An example matrix of reduced dimensionality is shown in Figure 6D. Example resulting clusters are shown in Figure 6F.

Further, the Office Action relies on Vaithyanathan at column 2, lines 37-43, for teaching the step/function of performing a partial statistical process.

That section of Vaithyanathan states that,

"In another aspect of the present invention, for each cluster the terms having greatest impact on the documents in that cluster are identified. The identified terms represent key-words of each document in that cluster. Further, the identified words form a cluster summary indicative of the documents in that cluster."

That section is a summary of step 29 of Figure 2. Step 29 is described in more detail in column 8, lines 24-44. Step 29 determines words that characterize a cluster. In particular, step 29 determines words having the most impact or greatest effect on the cluster to which the document has been assigned. The words

having the greatest impact are placed in a cluster summary for indicating the subject matter of the documents in the cluster (column 8, lines 34-46).

Thus, it can be seen that the clustering approach taken in Vaithyanathan is completely different from the key word deriving device of the present claimed invention.

Vaithyanathan teaches representing each document as an M dimensional vector. The present invention, on the other hand, acquires document data having a parameter previously added thereto.

Vaithyanathan teaches reducing dimensionality of an initial matrix of documents and words 50 ($N \times M$) to produce a reduced dimensionality matrix 60 ($N \times K$). The present invention, on the other hand, divides the document data for each type of parameter.

Vaithyanathan teaches grouping of documents into clusters. The present invention, on the other hand, performs a partial statistical process for words in each of the divided document data.

In other words, the present invention differs from that in Vaithyanathan at least in that the present invention is biased by a parameter previously added to the document data and the document data is divided by each type of the parameter. In an example embodiment of the present invention, parameters of “Executive A”, “Planner A”, “Engineer A”, etc., i.e., author names, are recorded in the document table. Then the document data is divided for each type of parameter

(e.g., types of parameters include “Executive”, “Planner”, and “Engineer”). Thus, for example, document no. 1, has an author named “Executive A” added as an attribute value in the document table. “Executive A” of document no. 1 is a type of “Executive”.

Such relationship between document data, parameter, and type of the parameter are recited in the present claims as:

“acquiring document data each having a parameter previously added thereto” and “dividing the acquired document data for each type of the parameter added to the document data.”

Applicant submits that Vaithyanathan does not disclose a parameter added to its document data and dividing the document data for each type of the parameter. This feature is recited in each of the independent claims 1, 6, and 7. In the present invention, by dividing the document data based on the type of a parameter previously added to the document data, key words can be derived for various and numerous document data (present specification at page 4, lines 8-16). Thus, Vaithyanathan fails to teach or suggest each and every claimed feature of the present invention. Accordingly, Applicant respectfully requests that the rejection be withdrawn.

CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert W. Downs (Reg. No. 48,222) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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